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vertically cracked vapor deposition process and consisting of about 1 to 5 weight% yttria, 0-1 weight% Hafnia, and the balance zirconia.

8. (Amended) A thermal barrier coating system comprising:

a metallic substrate component of a gas turbine engine;

A10 a thermal insulating ceramic layer of yttria-stabilized zirconia having between 1 and 5 weight percent yttria and about 1 weight percent Hafnia, the thermal insulating layer being deposited by dense vertical cracking; and

a bond coating that adheres the thermal insulating layer to said substrate.

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